

BROAD AGENCY ANNOUNCEMENT FOR CHEMICAL BIOLOGICAL
INITIATIVE FUND W911NF-05-R-0010
AMENDMENT 0001

The purpose of this amendment is to include additional technology areas in Section 2. TECHNOLOGY AREAS OF INTEREST, Section 3. GENERAL INFORMATION, 3.3 Instructions and Points of Contact, to change an email address, and Section 4. PROPOSAL PREPARATION, 4.2 Proposal Submittals, to extend the due date for proposals.

Amend: Section 2. TECHNOLOGY AREAS OF INTEREST, 2.1 Detection – Chemical and Biological to include:

2.1.1.1 Broad Spectrum Chemical Detection Technology.

The Joint Program Manager for Contamination Avoidance seeks support in advanced development for chemical agent detection and identification. Develop a broad-spectrum chemical detection and identification technology that is capable of automatically detecting and identifying toxic industrial chemicals, chemical warfare and non traditional agents, including Schedule 1, 2 and 3 chemicals and precursors, especially low vapor pressure hazardous chemical agents. Desired technologies are not agent specific, but provide for broad detection and identification capability on a single detection platform. The system must be capable of detecting/identifying the analytes in all physical states (liquid, solid, and vapor) within a mixture of at least 20 components at sensitivity levels as cited in the Joint Chemical Agent Detector (JCAD) performance specification, the equivalent of 10% LD50 for documented analytes not in the JCAD performance spec, 100 parts per billion vapor for undocumented analytes, and sub-microgram quantities for undocumented liquid/solid analytes. Solutions should be capable of network connectivity to existing and projected battlefield communication architectures and modular in design to afford flexibility for use in one-man or wheeled/tracked platform applications. The overall system should have the capability to operate for at least 12 hours with internal batteries in the man-portable configuration, system cost less than \$75,000 military hardened and lifecycle cost less than \$7,500 per year.

2.1.1.2 Generic Biosensor Development

The Joint Program Manager (JPM) for Biological Defense seeks development of network-capable biosensors (technology may be aerosol particle counters, fluorescence microscopy, mass spectroscopy, immunological assays, etc) to act as a trigger and/or a stand alone detection technology, or complement existing fielded detection systems, by enabling environmental detection of Biological Warfare Agents of interest. The target for improvement is reduction in both resource and logistical burdens; improved sensitivity; improved confidence of results.

2.1.1.3 Point Detector Performance Models and Sensitivity Enhancement

The Joint Program Manager (JPM) Nuclear, Chemical, Biological (NBC) Contamination Avoidance is seeking support in the development of a generic physics-based model(s) for expected detector performance in varying environmental conditions. The model(s) should consider parameters vital to the process from end-to-end (ie, sample transport, sample processing, detection cell(s), detection technologi(es), operating parameters, detection algorithm(s), etc). The generic model should include input parameters for the detection technologi(es) (IMS, SAW, electrochemistry, resistivity, etc.) The JPM is further seeking support in the development of technology to preconcentrate a vapor sample and provide it to generic detectors in order to increase sensitivity, while at the same time maintaining or improving selectivity. The hardware for the preconcentrator should be no more than 15 cubic inches, weigh no more than 0.5 lbs, operate on AC/DC power, with power consumption less than 10 W and maximum current draw no more than 2 A. It is desired that the preconcentrator achieve at least a 10-fold increase in concentration presented to the generic detector with a five-minute cycle, and a 100-fold increase in concentration with a 30-minute cycle. The preconcentrator should provide at least a 2L/min sample stream to the generic detector during the purge portion of the cycle.

Amend: Section 3. GENERAL INFORMATION, 3.3 Instructions and Points of Contact

Interested parties are encouraged to submit comments or questions via electronic mail to the following e-mail address: QA@arl.army.mil. Comments or questions submitted should be concise and reference the relevant part and paragraph of the BAA. Only questions received by 5 September 2005 shall be addressed. All questions and responses will be posted on a Q&A section of the ARO web site at <http://www.aro.army.mil/> under "For the Researcher" as they become available or not later than 15 September 2005.

Amend: Section 4. PROPOSAL PREPARATION, 4.2 Proposal Submittals.

The technical proposal and cost proposal must be received electronically to the following e-mail address: BAA@arl.army.mil no later than 1600 hours (4:00 PM) local time on 9 October 2005.